THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE

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Approach

ADJUSTING TO LIFE ON A CARRIER

Learning the Hard Way

Pushing Fuel

The Navy & Marine Corps Aviation Safety Magazine
November-December 2010 Volume 55, No. 6
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Mishaps cost time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous; the time to learn to do a job right is before combat starts.

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November–December Thanks

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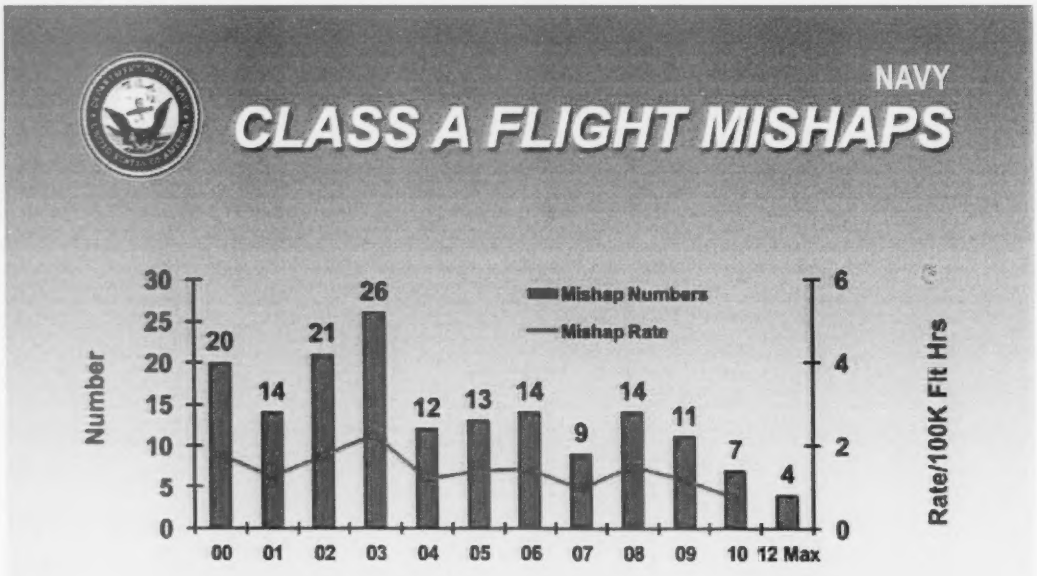
John Minners, CNATRA

Summary of FY10 Aviation Mishaps

While we can be encouraged by our efforts this past year, and the improving trends, we have to realize two things: past performance doesn't guarantee future results and we need to do better. In 2003, the Secretary of Defense challenged us to reduce mishaps by 50 percent, then upped the target to 75 percent. We all know the goal is 100 percent. Every crew that gets airborne is supposed to return safely as planned—that is our goal. The Naval Safety Center team wants that to be the standard.

In FY10, the Navy had seven Class A flight mishaps, compared to 11 the previous year. As you notice in the accompanying chart this represents continual improvement over the past several years. This also indicates that your efforts and dedication to doing things right are paying dividends in saving lives and assets. This improvement, as well as the 5- and 10-year averages, is the lowest mishap rate in our history. However, we lost eight people in Navy mishaps this past year. Six of this year's seven mishaps had some form of human failures.



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CLASS A MISHAPS/MISHAP RATE FY COMPARISON:	7 / 0.74	11 / 1.18
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10-YEAR AVERAGE (FY00-09) MISHAPS/MISHAP RATE:	15.4 / 1.50	

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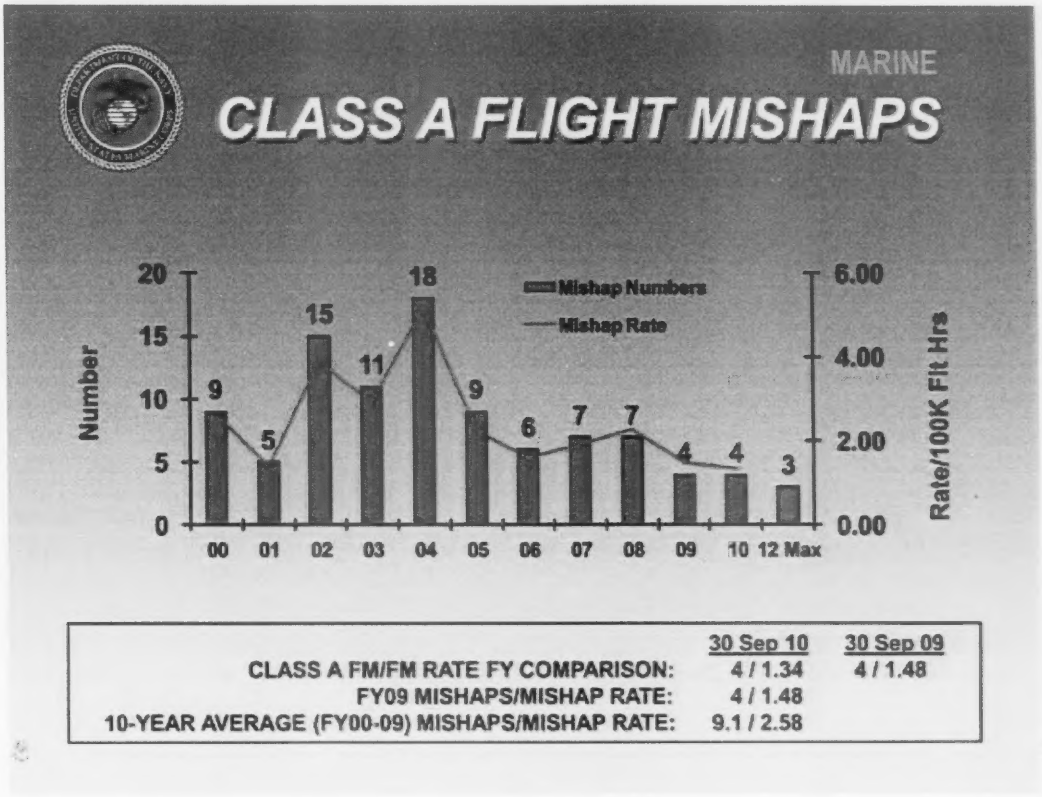

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Also, this is the third year for the media category, given to units or individuals who use digital and media resources to promote aviation safety. The use of videos, websites and presentations are a valuable tool to prevent mishaps, and Grampaw wants to recognize those contributors.

Gramps says to put together your nomination package for an individual author and a command for the print categories, and don't forget an entry for the third category: media.

The reference is the CNO Aviation-Related Safety Awards, OPNAVINST 1650.28A.

The Initial Approach Fix

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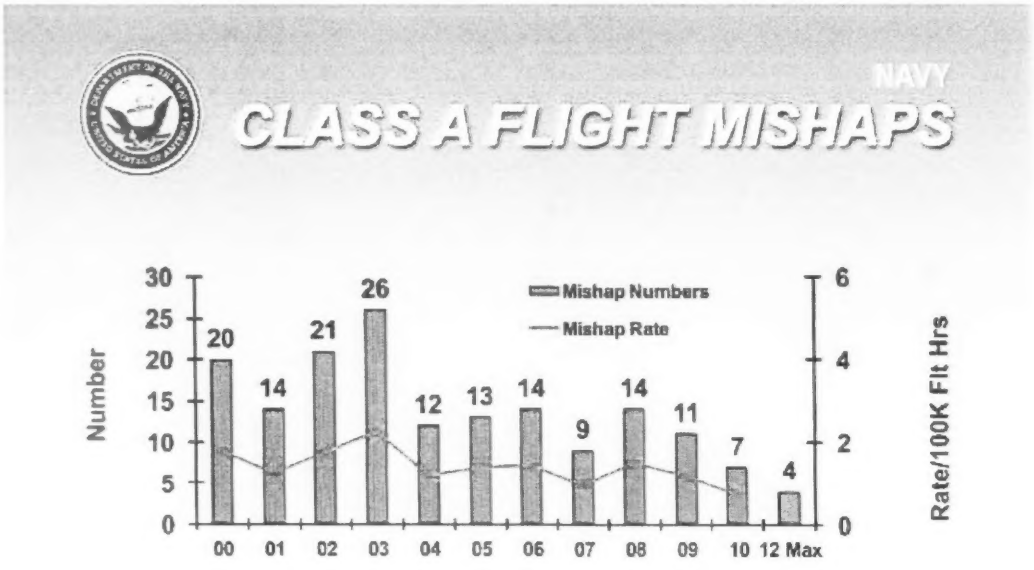

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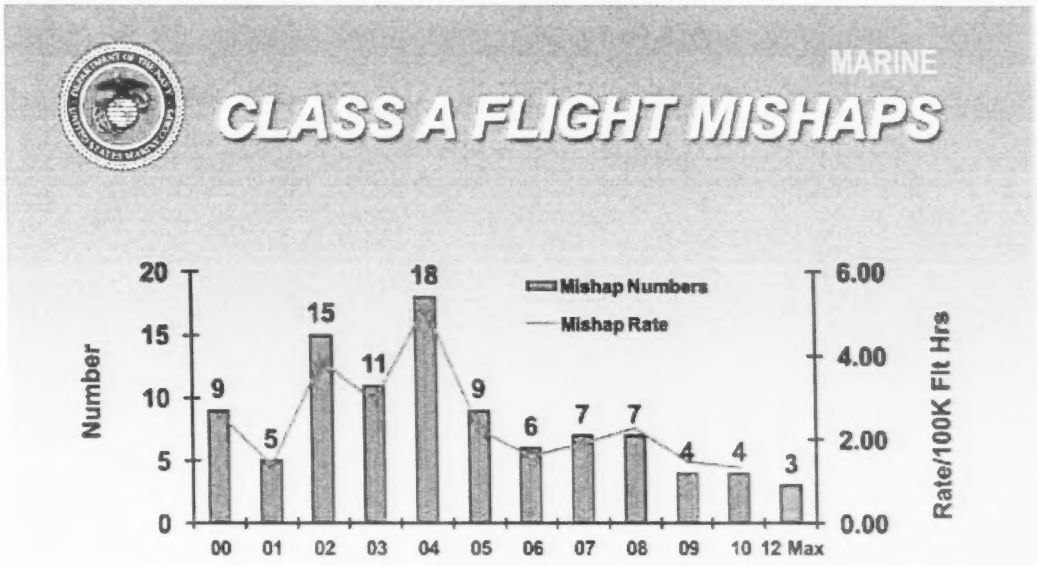

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Learning the Hard Way

This story highlights the importance of sharing both your failures as well as your successes within your ready room, your community and among fellow aviators of all platforms.

BY LT. ADAM VANDEN BOOGAARD

During the early summer, my squadron was midway through our predeployment work-ups. We recently had returned from a month-long boat detachment and had flown our Prowlers very little during the two weeks following our return to NAS Whidbey Island. I had joined the squadron from the FRS six months earlier and had not flown in the front seat since our return from the boat.

I was scheduled to be ECMO-1 for a round-robin airnav. The crew consisted of a senior lieutenant pilot, myself (having put on O-3 that morning), a lieutenant commander (qualified as mission commander), and a commander, who joined us from the electronic attack wing. After all crew members filled out the requisite EP/limits sheet because of our time away from the cockpit, I completed a standard admin and NATOPS brief to our slightly nonstandard crew. We then walked and hot-switched into a jet that just had returned from a similar sortie.

With our wings spread and locked, we taxied out of the line. During the roll, I started the before-takeoff checklist from the PCL. At the wing-fold item, I reached down to verify the wing-lock-switch position. The switch has two positions: UNLOCK (the forward position) and LOCK (the aft position). When the wings are spread and the switch is in the LOCK position, it inserts the wing locks to prevent an inadvertent wing fold. When I checked it, the switch was in the correct aft position for the spread-and-locked configuration. However, mistakenly thinking that it had been left in the incorrect position from the previous flight, I moved it to the UNLOCK position and told the crew over ICS. I didn't realize it, but I had put the switch in the wrong position for takeoff.

On the boat, where I had most recently been flying, the switch is almost always in the forward position during the before-takeoff checklist. It's in this position because as you run through those checks, the wings usually are folded. For this reason, the "wings" checklist item is always one of the last that you do, just as you taxi onto the catapult. The switch is brought to the aft position only after the wings have been spread to lock them into place. Although we were operating ashore at home field, my habit pattern from the boat had stuck with me and caused me to place the wing-lock switch in the wrong position.

After an uneventful takeoff and en-route portion of our flight, we coordinated with ATC for our approach to home field. With a cloud layer at 1,000 feet AGL, the break was closed. I switched-up approach and was given a descent and a vector for the ACLS approach to the duty runway. With our descent checks complete, our pilot extended the speedbrakes during a descent from 10,000 feet MSL. To our surprise, nothing happened. She told the crew the speedbrakes would not extend. We discussed our lack of speedbrakes and how that might affect our approach. We decided the aircraft could be slowed without the speedbrakes, and we would continue with the approach.

ATC had us at 3,000 feet MSL, where we slowed below our gear speed of 250 knots and tried to lower the flaps, slats and the gear. A glance at our wings and IPI however, showed that the flaps and slats were not moving. The nosegear was barberpoled, but the main gear indicated down and locked. Our airspeed had slowed to 220 knots, and the pilot immediately brought the throttles up to maintain between 200 to 240 knots to avoid departing controlled flight. We discussed the issues and decided that since the situa-

Photo by PH3 Rob Gaston. Modified.

Although we were operating ashore at home field, my habit pattern from the boat had stuck with me and caused me to place the wing-lock switch in the wrong position.

tion required further troubleshooting, we should break off the approach.

We contacted approach and requested vectors to Smith Island (a local holding point) and a block altitude of 6,000 to 8,000 feet for troubleshooting, the standard for emergencies near home field. We used base frequency to inform the ready room and maintenance control of our situation. Once established in holding, we determined that getting the flaps down was our highest priority. We were confident the only reason the nosegear had barberpoled was because we didn't sufficiently slow down. The EA-6B nosegear is often barberpoled at speeds in excess of 200 knots.

OUR FIRST ORDER OF BUSINESS was to do a quick check and slow the aircraft to get the nosegear to lock into place before proceeding with the checklist for when the flaps/slats fail to normally extend. We slowed the aircraft to 185 knots, but the gear did not come down as expected. We thought we had two separate issues and considered the worst-case scenario: a no-flap, no-slat landing with barberpoled nosegear.

We called approach to coordinate getting an LSO on-station to talk us down if necessary and a visual inspection from another aircraft in the event it would be needed. We then started stepping our way through the landing-gear-handle-down-indicates-unsafe checklist, believing we could land in a no-flap/no-slat configuration. The gear had to get gear down. We hoped that the gear was down and that the indication in the cockpit was wrong. A recent Prowler hazrep detailing that exact scenario was fresh in our minds, and we allowed it to cloud our judgment.

We read the landing-gear-handle-down-indicates-unsafe checklist from top to bottom. All circuit breakers were in, and we had no secondary indications the gear was not down and locked.

A jet from another squadron was heading our way for a visual inspection. Before the join-up and per the checklist, we decided to yaw the aircraft and vary the G-loading at 240 knots, but the barberpoled indication remained. After the visual inspection, the other crew said, much to our chagrin, that our main gear appeared down and locked, but our nose gear was only 90 percent of the way down.

As our crew regrouped and discussed our options, the skipper's voice came over base frequency and suggested we worry about getting the flaps and slats down first, before continuing with the gear issue. Knowing we could always use the back-up landing gear blow-down

system, we concurred and began running though the flaps/slats-fail-to-extend-normally checklist.

Halfway through that checklist, we again heard the skipper on base frequency, suggesting we check the position of the wing-lock switch. As soon as the transmission ceased, I realized that I had induced this problem. I reached down and felt the wing-lock switch in the forward, incorrect position. I told the crew and moved the switch to the aft and LOCK position. We then attempted to extend the speedbrakes. A great feeling of relief washed over the entire cockpit as we looked to our wing tips and saw our boards normally extending. With our airspeed less than 250 knots, we tried to lower the flaps and slats. Another wave of relief came over the crew as we watched the flaps and slats begin to lower. As we slowed past 180 knots with our flaps and slats down, I hawked our IPI and watched as the barberpoled nosegear changed to show the expected three-down-and-locked indication. We verified the indications in our cockpit with the other Prowler, who confirmed our configuration. Thinking all of our problems had been solved, we split with the other Prowler and told approach control we required an ACLS approach. We added that we did not need to make an arrested landing, nor did we need a LSO to talk us down.

We were placed on extended vectors for the ACLS to the duty runway 25, with a broken cloud layer at 2,500 feet MSL. At two miles from the field, with the runway in sight, we were told to break off the approach and to continue on runway heading up to 1,000 feet MSL. The runway waveoff lights were flashing red. We climbed, wondering what could have caused our waveoff. As we reached 1,000 feet, and just when we thought things couldn't get any worse, they did.

Our pilot announced that we had a LOW FUEL caution light, indicating we had 1,800 to 2,500 pounds of fuel remaining in our fuselage fuel tanks. This light is a land-as-soon-as-possible emergency in the Prowler, which meant we had to immediately get on deck. Our mission commander from the back seat told the front seat crew to check the position of the TANK PRESS switch, and sure enough, the switch was in the NORM position. This switch must be in the ORIDE position with the nose gear not up and locked, or fuel will not transfer from the wing tanks to the fuselage tanks. We had reviewed this CAUTION in the landing-gear-handle-down-indicates-unsafe checklist earlier, but apparently hadn't heeded it.

Although we were indicating over 4,400 pounds of total fuel, more than half was trapped in the wings. The pilot immediately moved the switch from the NORM to the ORIDE position, and fuel began transferring to the fuselage. We still had to honor the annunciator-panel light, squawked 7700 for our emergency, and talked with approach. Approach said the duty runway 25 was fouled because of a blown tire from another aircraft, and the off-duty runway also had been fouled as the blown tire had occurred at the intersection. We quickly decided that as a land-ASAP aircraft, we would take a trap on the off-duty runway to prevent us from going through the fouled intersection. We told approach that we had the field in sight and were switching-up tower. We set up the aircraft for landing on the off-duty. I switched to tower, told them of our situation, and received clearance to land. We ran through the landing checks one last time to make sure everything had been covered and then made an uneventful field arrestment.

The most troubling aspect of what should have been a very mundane local-area flight is that every problem we faced was self-induced by crew-member error. Several contributing factors allowed the Swiss-cheese holes to align. Our squadron's lack of recent flight time and lack of recent shore-based flying, coupled with our crew's complacency, ultimately led us into a very dangerous situation.

The lessons from this experience certainly include knowing cold the ship-based versus shore-based procedures. The two are very different worlds, and each must be respected for their differences. Recognize the dangers of an entire crew being out of the cockpit for prolonged periods of time, and realize how deadly complacency can be. If you lack recent flight time and are climbing into a cockpit for the first time in a while, be more careful and deliberate. Attention-to-detail keeps us flying.

Finally, no flight, no matter how routine, should ever be taken lightly. There is no excuse for not following procedures or checklists; as we're all told in flight school, they are written in blood.

I worry how the outcome may have differed had our squadron skipper not made the timely and crucial suggestion to check our wing-lock switch position. The indications of no speedbrakes, barberpoled nosegear, and inoperative flaps and slats, had stumped the entire ready room, as well as maintenance staff. This issue was solved and a crisis averted because of personal experience.

LT. VANDEN BOOGAARD FLIES WITH VAQ-131.

An EP Sim Comes To Life

This flight was supposed to be an uneventful 45-minute hop, but that's not how it ended.

BY LT. STEPHANIE HOFFMAN

I departed NAS Oceana (NTU) for NALF Fentress on a beautiful VFR afternoon in late September. I was one of five squadron pilots bouncing in preparation for an upcoming CQ det. At the end of the flight, I had realized why, way back in the training command, sim instructors created emergency situations out of seemingly easy flights.

For standard Fentress FCLP hops, legacy Hornet squadrons typically use a daytime bingo fuel of 3.0, or 3,000 pounds of gas, to be on deck at Oceana with at least 2,000 pounds remaining. Most days the 3.0 bingo seems high—almost too much cushion. Because the forecasted weather called for VFR conditions, all FCLP players agreed on the 3.0 bingo. Because we were from different squadrons, all pilots were briefed to monitor the same aux-radio frequency; a decision that would prove immensely helpful.

We arrived at Fentress as singles and worked ourselves around the pattern, concentrating on ball-flying and CQ procedures. With one pass remaining at Fentress, I called Oceana Arrival on aux radio to coordinate my return. They said the field was now IFR, and I needed to request an instrument approach. While we bounced in beautiful weather conditions, less than 10 miles away, a low, dense cloud layer had rolled in over Virginia Beach and blanketed the airfield.

I thought, "No big deal, I can just bump up my fuel numbers to account for the extra gas needed for a PAR."

I told our LSO about the weather, so he would clear us to leave the pattern with some extra gas. I was happy with how things were going. Two minutes later, I made my final pass, cleaned up, and headed for home. After calling arrival again, I was told to expect to hold because an emergency was in progress. The most information I could get from arrival was that an FA-18 with a hung and locked bomb required priority handling. My fuel state was 2.7; nothing critical, but not comfortable. Also, arrival told me to expect to hold indefinitely.

THE SOLID LAYER OF CLOUDS remained overhead NTU at 450 to 800 feet. A slight panic feeling was beginning to sink in, as I realized the situation was getting pretty bad, pretty fast. I used my aux radio and prebriefed tac freq to coordinate with the other FCLP pilots leaving Fentress. We shared fuel states, configuration, and decision-making aspects of the situation at hand. While the communication inter-flight was strong, a huge communication breakdown occurred on our primary frequency. Before the end of the flight, every one of us had declared an emergency.

Arrival, on our primary radio, switched all five pilots to separate discrete frequencies. We could no longer hear radio transmissions from other aircraft; we could only hear arrival. As we continued to hold indefinitely, burning precious fuel, we stepped on each other's radio transmissions, adding to the controller's confusion. Eventually, arrival was so saturated that I got no response from them. My nerves got the better of me, and with each radio call, I became more

demanding. Unwilling to give up, I used my aux radio to communicate with the squadron duty officer.

The experienced JO on duty read our bingo numbers for an emergency profile into NAS Norfolk. If needed, we could bingo into Norfolk, get some gas, and wait for Oceana to clear up. I was now 20 miles south of NTU with less than 2,000 pounds of fuel. As fuel rapidly depleted, unbeknownst to me, so did my situational awareness. I hadn't considered landing at Fentress, nor did I think of flying south (in VFR conditions) to Elizabeth City, one of Oceana's standard divert airfields. When arrival vectored me farther south, I finally declared myself an emergency aircraft.

I didn't want to do it, but, having had enough of holding at minimum fuel, I announced, "Arrival, aircraft 400 is now emergency fuel and is proceeding inbound." That call did elicit a response, and I was cleared to NAS Oceana.

While inbound, I still did not know if the "emergency hung and locked aircraft" had landed, but I began my approach. Arrival tried to wave off one of the other pilots on short final, but he declared an emergency and proceeded to land. Two minutes later, I was rolling out on runway 5L with 1,500 pounds of fuel remaining. The three other pilots all subsequently declared emergencies, receiving the priority to land.

In the end, everyone arrived back on deck, but we discovered just how quickly an uneventful flight can get hairy. All five pilots sat down to a postflight talk. While we communicated well with each other, our LSO, and our squadron duty officer, we allowed the communication to breakdown with our controlling agency. We easily could have landed at Fentress, Norfolk, or Elizabeth City if needed, but we were all consumed with returning to Oceana. We learned that while we always brief "think two steps ahead," it is imperative to do so in the cockpit. I guess that's what the sim instructors back in the training command had in mind all along.

LT. HOFFMAN FLIES WITH VFA-131.

While the communication inter-flight was strong, a huge communication breakdown occurred on our primary frequency.

Photo by MCS3 Chad R. Erdmann. Modified.

ADJUSTING TO LIFE ON A CARRIER

BY LT. AARON METRICK

Any job associated with carrier aviation immediately is associated with danger. The danger is what attracts us, keeps us on edge and makes us strive to be better. We know a flight deck during flight ops is one of the most dangerous working environments in the world.

We brief the hazards and the ways to mitigate them every day. We wear protective gear and constantly are under the protective eyes of supervisors and safety officers. Therefore, flight-deck mishaps are relatively rare. As I near the end of my first cruise, I too have survived without any accidents on the flight deck or airborne. I have learned that where I'm just as likely to get hurt (granted, with less severity) is when I drop below the flight deck during my daily life on a carrier.

One of the first lessons I learned after coming on board is that the ship is made from steel and it doesn't give. My head however, does move. Unfortunately, everything on a carrier seems to come in one-size-fits-all set, and that size is for about a 5-foot-10-inch individual. At 6 foot 4 inches, I spent my first week on board learning not to sit directly up in bed and to duck while going through each door frame and bulkhead. I spent days learning to duck when turning around after closing hatches. I learned how to draw blood by turning my head into a metal box hanging on the side of the p-way just aft of a hatch. Another week was spent learning to duck while going to the bathroom with low-hanging light fixtures. More time was needed to figure out how to maneuver on the mess decks through all the pipes without scalping myself. Finally, I learned to lean forward while going up ladder wells.

I survived a lab-intensive course where learning was

Photo by PHA Chris Stephens

Photo by PH3 Aaron Burden.

often done the hard way. Now I take notice of every possible hazard while walking around the ship. I have the clearances for most passages down to a science, and I know the exact minimum inches to duck.

I learned that the ladder wells on a ship are like no other stairs or ladders anywhere else in the world. They're steep, often slippery, the steps are narrow, and handrails are often all that stand between me and a medical emergency.

As we move to being a more germ-conscious Navy, I've noticed that many of us try to maneuver around while touching the smallest possible surface area. This technique is extremely dangerous while going down ladder wells covered with condensation, oil, fuel and everything that is tracked around a boat of 5,000 people. Fortunately, every time I've gone mogul skiing down the ladder, I was holding onto the handrails or the bar above and have caught myself. Unfortunately, not everyone has been so successful. I am very aware when going up, and especially going down, of the danger. As a result, I might just be the slowest person to get stuck behind if you're in a hurry.

Finally, I get to the human factors. I never really thought about what living on a boat entailed until I actually lived on one. The environment is often beyond loud. Sleep is minimal, water scare, and heat abundant. Stress is an overlooked hazard, especially in a community where stress is commonplace and often welcomed. However, on the boat, you cannot easily escape stress by driving home at the end of the day and relaxing with a hobby or something else. Adding to the stress load was the constantly changing schedule, often with late nights and early mornings. Going to the gym or standing in the hangar bay looking at the ocean is necessary just to stay sane and be relaxed.

Viruses, I now know, spread as fast as fire, and there are no general quarters to combat them. On my cruise we fought a wicked battle against viral gastroenteritis (VGE) which dehydrated and malnourished a large percentage of the crew. A full-fledged case could be painful, and more than a few aircrew went med-down as a result.

The Navy and water are synonymous; however, access to potable drinking water is not always such an easy match. Working out on the flight deck or in planes where temperatures routinely hit a heat index of 130 F makes water an integral ingredient in safety. When nearby water fountains are broken and fresh cool water is a five-minute walk, sometimes Sailors forgo water out of laziness, time restrictions, or inaccessibility. My plan was that whenever I walked back to my stateroom, I would fill my water bottle before leaving the ready room. I would then have water during the night and wake up hydrated. Many nights I've gotten up to duck my way around a light fixture headed to the bathroom, but I determined that to be the better scenario when compared to passing out with heat stroke.

All of these things that I learned on my first cruise have very little to do with my actual job in the Navy. However, I learned these small things would most likely injure me or keep me from performing in the air. It's always the little things that add up to cause problems. Big dangerous events are easy to evaluate, we often can plan for them in advance and mitigate the risks they bring. The daily activities we habitually follow are sometimes the most dangerous aspects of our day. We tend to put down our guard, and our situational awareness drops off as we feel we're in a safer environment. I learned quite a bit on my first cruise about how to stay safe within the confines of the ship, and I hope these lessons stay with me when I cruise again.

LT. METRICK FLIES WITH VAW-121.

An Unexpected Visit

Two nuggets find themselves on emergency approaches to an unfamiliar field.

BY LTJG. ANNIE DOMKO (DIAMOND 32) AND LTJG. JUSTIN ESTRADA (DIAMOND 34)

As the two newest Diamonds in the squadron, we were scheduled to fly as a division of red air in support of a large-force exercise. The mission was put together for surface ship air-intercept-control practice. The exercise included eight blue air and six red air, along with USAF AWACS and tanker support. It would be the largest event for us since joining the squadron.

The plan was to launch, tank, execute the mission, tank and return home to Lemoore. It sounded simple, but before we kicked off the brief, several things changed:

- The AWACS fell out after the entire fleet was grounded that morning.
- The second division of blue opted out of the flight.
- The KC-10 tanker was replaced at the last minute by a KC-135.

Diamond 32: With all these changes, our brief started about 30 minutes late. Despite the delayed start, we covered all the salient points of our mission. Notably, having two nuggets in the flight, who never had tanked from a KC-135. Our lead took the time to cover the specifics associated with this type of tanker.

Diamond 34: As many Navy pilots can attest, tanking from the KC-135 can be challenging, especially in turbulent weather. It has a boom with a short hose and a smaller, heavier basket that makes refueling a big challenge.

Diamond 32: The rest of the man-up, start, taxi and takeoff were uneventful. Upon arriving at the working area, our lead tried to find our tanker.

Diamond 34: We spent about 20 minutes holding when finally we heard the tanker check into the area. Lead reported our position on the track, and the tanker reported he was at the same point, indicating we were close to a join-up. However, after a few orbits with no radar hits and no sign of the tanker, I saw question marks start to form above our canopies.

Diamond 32: Those question marks turned into light bulbs as lead asked the tanker to report his position from the nearest TACAN. As it turned out, the tanker was on the wrong track, 100 miles south of our position. The tanker headed north, while we headed south to join.

Diamond 34: After a quick discussion within our flight, we accepted flying below RTB bingo to stay on-station and get fuel. We set a bingo for MCAS Miramar, our nearest planned divert. Diamond 31 took gas first. While he fueled, we discussed the fuel states and what order to take the gas. I was the lowest, so I would get the next plug, followed by 33 and finally 32. As I started making stabs at the basket, Diamond 33 told me to only take 500 pounds above bingo, so we could shuffle the remainder of the flight for gas. With turbulent air and my inexperience, I struggled to plug. I managed to take some fuel, but I also took a lot of time, which didn't help the rest of the flight.

Diamond 32: After numerous stabs at the basket, and one quick plug followed by an immediate disconnect, I hit bingo. Before I could head east toward Miramar, flight lead decided I should wait to see if 34 could get gas, which would determine whether we would go to Miramar as a division or in section.

Diamond 34: With only a few hundred pounds to play with, I slid into position behind the basket and attempted another plug. After several unsuccessful stabs, we called it off. The division left the tanker and headed to Miramar. Because of our positions on the tanker when we departed, 33 and 32 were about half a mile in front of lead and me. Thirty-three led us east, while 31 passed the waypoints and retrieved ATIS information for Miramar.

Diamond 32: The ATIS information called a broken-to-overcast layer over Miramar, which restricted us to vectors for PAR approaches. Instead of joining-up, we remained as sections. During the vectors, I realized the bingo state we had set was too aggressive, as we were expecting visual approaches to the overhead. The LO

FUEL light came on as we overflew North Island and confirmed our situation.

Diamond 34: Meanwhile, 31 and I followed 33 and 32 on the daisy chain of vectors. Asking for "priority handling" only resulted in even more vectors. My fuel state was uncomfortably low.

Diamond 32: I let 33 know of my LO FUEL caution, and he immediately declared an emergency. Approach gave me a separate squawk, frequency, and a more direct vector, as they cleared traffic out of my way. The broken-to-overcast call proved to be overly conservative, and I let approach know I saw the field. I told them I was proceeding visually.

Photo by SSgt. Gaddis.

Diamond 34: My LO FUEL caution soon followed. Before I could tell 31, he already was declaring an emergency for me. I was vectored behind 32.

Diamond 32: I remained on approach frequency, and they cleared me to runway 24R. Unfamiliar with Miramar course rules, I assumed the clearance was to land. I was caught off-guard when they switched me to Miramar tower while on short final. I switched to the wrong frequency, which resulted in a NORDO condition on top of being emergency fuel. As 31 read me the correct frequency on TAC, 33 got me clearance to land. I landed and contacted ground after my rollout.

Diamond 34: As the next emergency aircraft in line, I found myself on short final. Just when the hairs on the back of my neck started to ease, I heard the dreaded deedle-deedle, and looked to see an anti-skid caution. With 12,000 feet of runway, I was comfortable switching off my anti-skid for the landing. I told 31 of my action, and he replied calmly with a, "Sounds good, you've got plenty of runway." I made it on deck with no other issues.

Happily receiving fuel in the hot pits at Miramar, we had a chance to reflect on some great lessons learned:

• **Bingo means bingo.** Operating around the field, we can take the word bingo too casually. As soon as that fuel state is reached, we should turn toward the airfield, no questions asked, and no waiting for the rest of the flight.

• **We were off the coast of California, not Afghanistan.** Already salvaging the mission to squeeze what little training opportunity was left, we should have cut our losses and returned to Lemoore upon reaching our original RTB bingo fuel state.

• **It's OK to change your mind.** We had decided early that we were going to Miramar, despite North Island being a few miles closer. We sometimes think of the "I should abort — no, I shouldn't abort — yes, I should abort" scenario, but it would have been more than acceptable to break off our approaches before the numerous vectors and instead head to North Island.

• **Stay calm.** From communicating our intentions to passing ATIS and coordinates to the flight, our leads did a great job staying cool-headed and being the calm voices for us on the radio. We never felt the situation was hopeless.

LTJG. DOMKO AND LTJG. ESTRADA FLY WITH VFA-146.

A NEW URL, A NEW LOOK— CHECK US OUT.

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Mishap-Free Milestones

VMFT-401	50,000 Hours	15 Years
VFA-106	100,000 Hours	5 Years

Echo in My Head

BY CAPT. JASON HARRIS, USMC

Just getting home was the mindset of my CH-46E crew as we began the final day of our cross-country ferry flight. The trip had been uneventful, but a paperwork holdup at MCAS Cherry Point (coupled with a delay in San Angelo, Texas, to tighten leaking hydraulic and fuel lines) had put us three days behind schedule.

Our last leg was from Phoenix Sky Harbor International to MCAS Camp Pendleton. As I called the squadron ODO, the crew chiefs checked the aircraft servicing, while my copilot filed our flight plan. Gathering in the FBO's lobby, we laid down the Phoenix and Los Angeles VFR sectionals to brief our route home. The flight briefer reported the weather between Phoenix and Camp Pendleton was VFR, with no ceilings, and forecasted to remain as such. However, he did advise us of an IFR AIRMET off the coast. We all agreed it probably was the marine layer and would burn off or remain off the coast.

Departure from Phoenix went as planned, with nothing but clear blue skies all the way into Southern California. As we rounded the corner near Santa Ysabel, we saw a definite cloud layer. Apparently the IFR AIRMET had moved inland. We spiraled up through a hole in the clouds to establish ourselves VFR on top in the vicinity of Pauma Valley, about 20 miles to the east of MCAS Camp Pendleton. ATIS reported our VFR forecast had turned into an overcast layer at 1,200 feet, and the PAR and surveillance approaches were unavailable because of maintenance.

Had the PAR been available at the time there would have been no hesitation: contact GCA, log an approach, and call it a day. Before attempting the Copter TACAN 21 approach (with its 4.85 degree glide slope and 800 fpm descent rate), I tried to get in VFR with the old "lower and slower routine." Finding a hole in the clouds to the east, we descended to 500 feet AGL, and proceeded inbound. I slowed from 130 to 100 knots to 80 knots, as I tried to pick my way through the valley. However, the valley clouds had descended below 1,200 feet, and the VFR option quickly went away.

With the thoughts of "I just want to get home" echoing in my head, we decided to take an IFR approach to the field. We transited back to the east, climbed on top of the clouds, and contacted Camp Pendleton GCA.

After receiving the warm fuzzy of "Radar contact, 20 miles east of the airfield," we followed our vector and climbed to 3,800 feet. I was told to remain VFR. As we were cleared to the initial approach fix (IAF) for the Copter TACAN 21, I asked GCA to verify we would be

cleared IFR; they assured me that I now was. What I didn't know at the time is that because we were outside their airspace, GCA had to coordinate with SoCal Approach Control to get my IFR pick-up approved. As we reported the IAF inbound, we turned onto the 032 radial and tracked inbound. Per the NATOPS brief, during the approach the PAC focused on flying, and the PNAC handled all radio communications.

AS WE REPORTED THE FINAL APPROACH fix and were cleared to land, I increased our rate of descent to 1,200 fpm to hit my minimum descent altitude (MDA) of 900 feet MSL. Just before the missed approach point (MAP) the monitor advised me that I was well left of course, and told me to make sure we had selected the right TACAN. This got everyone in the helicopter's attention because there is steep terrain to the south of the airfield, left of the final approach course.

We had the TACAN and final approach course dialed in, and showed very little deviation on the CDI, which caused us to doubt our navigation instruments. We hit the missed-approach point about 300-foot high. I was frustrated at not having a high enough descent rate to hit my MDA, but I increased power to establish a 500 fpm climb.

After my copilot called missed approach to GCA, the monitor responded with, "Roger, contact tower."

My copilot and I looked at each other as if to say, "This guy knows we're in the clouds, right?" We responded, "Knightrider 09 is missed approach, executing climb-out." GCA replied, "Roger."

I slowed to 70 knots and increased power to climb out more quickly (all the while thinking of the left-of-course comment from earlier) as GCA made another radio call. "Knightrider 09, traffic advisory, single H-1 in the right base for the right grass."

The entire crew was convinced that GCA thought we were VFR and had no idea we were in the clouds. I came over the radio, with a little anger in my voice, and said, "Knightrider 09 is actual IFR, executing climb-out."

The controller's supervisor came on the radio to advise me that they knew we were IFR, and gave additional climb-out instructions. After leveling off, approach called, "Knightrider 09 radar contact, say intentions."

We asked them if the PAR was available—it was. We called for a full stop PAR, broke out of the clouds at about 975 feet MSL and landed.

I called GCA the next morning and requested they pull the tapes. My squadron ASO and I sat down with the radar chief to debrief the incident. The radar chief was very helpful and had pulled the radar recordings as well. The debrief provided several important lessons learned.

Controllers get complacent too. The "proceed visually, contact tower" radio call almost has become standard because of the large amounts of VFR approaches at this airfield. Also, the tenets of CRM need to be extended to outside of the cockpit. If you don't like what the controller is telling you, be as assertive as you need to be until you are confident they understand your situation.

It's been often repeated in this magazine that "it ain't over till it's over." The last 30 minutes of flight were the most stressful of the entire cross-country, and after landing, my crew chief confided to me that it was "the most scared I've ever been in a Phrog."

The next lesson learned is the importance of the debrief. It would have been very easy to complain about approach control to our ready room. But, by talking with GCA and reviewing the tapes with the radar chief, steps were taken to make sure this situation doesn't happen to another pilot.

Recognize the threat of "I just want to get home." Fortunately, our crew played it smart and didn't let the temptation of sleeping in our own beds interfere with our decision making, and ultimately, our landing.

CAPT. HARRIS FLIES WITH HMMT-164.

Pushing Fuel

BY LT. BORYA CELENTANO

There I was, over Afghanistan, in the middle of my third deployment and my second Operation Enduring Freedom (OEF) cruise. I just had finished my final vulnerability time and was headed to the last tanker before turning back to the big gray boat we call home.

My wingman had about 2,000 pounds more gas than me because of yo-yo tanking on our last vul. We switched to the boom freq and heard the tanker was sour and troubleshooting, and had a section of Super Hornets in tow. As the tanker crew continued to work through their problem, we requested the tanker pilot proceed direct to Kandahar airbase, our primary divert.

En route to Kandahar, we were told by Crowbar that we could have another tanker on-station in about 20 minutes. With this information, my wingman and I discussed waiting for another tanker or diverting to Kandahar. The sour tanker had to RTB, so we decided to continue to Kandahar, then orbit overhead, and wait for the relief tanker.

Twenty minutes passed without a relief tanker in sight, and the section of Super Hornets decided to immediately duck into Kandahar. With my wingman being fat on gas, we made the decision to wait another five minutes before diverting. A few minutes went by, and we were told by Crowbar that our tanker was 100 miles away and heading toward us. We pressed to expedite the rendezvous.

Five hundred pounds later, I joined up with the tanker and was about to plug in. I felt a sense of relief, but as I plugged, I didn't see a green light. My sense of relief quickly disappeared.

I backed out of the basket and told the boom operator "No flow."

I gave it another shot and again no green light. I immediately pulled out of the basket, put Kandahar on the nose and squawked 7700. I later learned the tanker had cycled the hose after I left for Kandahar, and my wingman received fuel without problems.

I was roughly 80 miles from Kandahar with a calculated fuel load of 1,500 pounds on deck. Kandahar approach cleared all traffic and cleared me to land on any runway. Because I was set up for a straight-in to runway 5, and there was a direct crosswind, I decided to make the straight-in. The weather was CAVU, and I could see the airport from about 30 miles.

I set up for a three-degree, glide-slope approach, and touched down on-speed with about 1,500 pounds. I applied the brakes and felt no resistance, so I took my feet off the breaks, tried again, and could not feel the jet was slowing down. I immediately put down the hook and reapplied the brakes. Only the short-field gear was rigged for runway 5. The hook skipped the wire, and my jet continued without slowing down. As I passed the 5 board, my airspeed still was above 100 knots. I elected to get airborne with a standard roll-and-go.

I SELECTED FULL AFTERBURNER (AB) and watched my airspeed slowly tick up. The end of the runway was coming fast, and the jet still did not want to go flying. With 1,000 feet of runway left and at 150 knots, I influenced the nose to get the jet in the air, and it climbed away with difficulty. As the go-around continued, I stayed in full AB. I tried to keep a positive rate of climb, so I had a green chevron (slow indication) and AOA tone. Still in AB I watched the fuel tick down at a rapid rate. Considering all of these factors, I pressed the E-JETT button to slick my jet and lighten the load.

I immediately began to climb away after jettisoning two 500-pound bombs and two external fuel tanks. Now with a slick jet, I flew a teardrop and landed on runway 23. On touchdown I did the loss-of-brakes procedure. I selected the emergency-brake handle, gradually applied the brakes, put down my hook, and to my relief, felt the jet slow down. Even with a slick jet, I used the entire runway before coming to a complete stop. I taxied with just under 1,000 pounds of fuel. With the field elevation of 3,338 feet and the outside air temperature of 110 F, the density altitude was 7,500 feet. I had a jet with carrier-pressurized tires and greased-up brakes, a direct crosswind, a combat load and a low fuel state. Sounds like a NATOPS check in the simulators.

Pushing fuel is never a smart decision, and there would have been no harm in diverting to Kandahar to gas-and-go. Had I diverted earlier, with more fuel, I would have had more options when I thought I had a brake problem. The main reason I jettisoned my stores was to maintain AB while extremely low on fuel, and underpowered with the density altitude and aircraft weight.

With my wingman being 2,000 pounds above me, an option would have been to divert to Kandahar and let my wingman wait for the relief tanker, which happened anyway. Proficiency with my wingman was not an issue, and although mutual support is always recommended, it was not necessary.

On the rendezvous with the relief tanker, I had him turn in front of my flight to expedite the join, which led the flight away from Kandahar as I set up to refuel. An option would have had been for the tanker to proceed to Kandahar while my flight stern-converted the tanker, therefore driving the tanker closer to Kandahar if another issue arose.

Although it was hot, having a density altitude so high (7,500 feet) was surprising. This also explains the poor and unfamiliar aircraft performance.

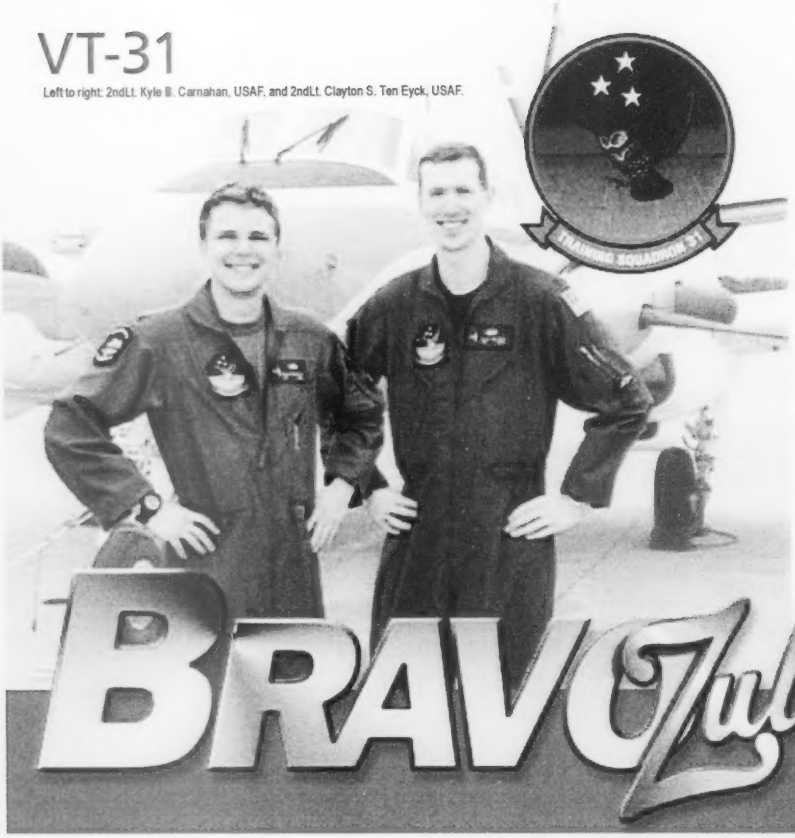
Photo by SSgt. Jason Robertson.

The decision to jettison my stores was the right thing to do given the corner into which I had painted myself. Diverting with enough fuel to make a proper go-around, and not worrying about staying in AB in the climb, could have prevented losing two bombs and two external fuel tanks—not to mention jeopardizing the EOD crew, who had to go outside the perimeter in Kandahar to detonate the ordnance and fuel tanks.

LT. CELENTANO FLEW WITH VFA-25.

BRAVO Zulu

VT-31



Left to right: 2ndLt. Kyle B. Carnahan, USAF, and 2ndLt. Clayton S. Ten Eyck, USAF.

Second Lieutenant Kyle B. Carnahan, USAF, and 2ndLt. Clayton S. Ten Eyck, USAF, advanced flight students with VT-31, were on an instrument airways navigation solo flight. Their T-44A Pegasus aircraft lost engine oil pressure at about 19,000 feet. They were in the vicinity of Dyess AFB, Texas.

They immediately evaluated the situation and referenced the NATOPS (Naval Air Training and Operating Procedures Standardization) emergency procedures. After completing an emergency shutdown of the malfunctioning engine, they declared an emergency with air traffic control and made a single-engine precision approach into Dyess AFB.

VR-48

A C-20G crew from VR-48, deployed to Al Udeid Air Base, was climbing through 30,000 feet on a departure out of Kabul, Afghanistan. The left landing gear unexpectedly deployed. The pilot immediately had to make extreme control inputs to fly wings level.

Eventually, a green downlock light alerted the crew to the uncommanded gear-down condition. The crew recognized the aircraft was well outside of the 225-knot/20,000-foot envelope for gear extension. In mountainous terrain, with degraded controllability and without a NATOPS procedure, the crew declared an emergency and coordinated a divert into Bagram Airfield.

The pilots configured the aircraft for landing and obtained a visual inspection from an F-16 pilot, who was returning from a combat mission. A night landing was made. Post-flight inspection revealed a broken uplock-latch fitting on the left mainmount.

Left to right: AWF2 Salvatore Settineri, AWF1 Andrew Powell, Lt. Julie Guerre-Chaley, Cdr. Max Waddoups.

Lieutenant Timothy Shilling (pilot) and LCdr. Brett Stevenson, LCdr. Shannon Callahan, and Lt. William Striepeck (electronic countermeasure officers) were flying off USS *Abraham Lincoln* (CVN 72). Shortly after launch, Lt. Shilling noticed reduced artificial feel in the control stick. This situation soon developed into binding flight controls. Lt. Shilling was unable to apply forward stick pressure.

Lt. Shilling and LCdr. Stevenson relied on their EA-6B flight-control-system knowledge to troubleshoot the problem, enabling Lt. Shilling to free the controls. Outstanding crew-resource management was used to regain control of the aircraft, and they diverted to NAS North Island. The aircrew made a precautionary arrested landing and brought the jet on deck without incident.

Left to right: Lt. William Striepeck, Lt. Timothy Shilling, LCdr. Brett Stevenson, and LCdr. Shannon Callahan.

Left to right: Ens. Adam J. Letizio, and 1st Lt. Joshua P. Romeo, USMC.

First Lieutenant Joshua P. Romeo, USMC, and Ens. Adam J. Letizio, advanced flight students with VT-31 at NAS Corpus Christi, Texas, were flying their T-44C Pegasus aircraft on an airways navigation solo flight. After takeoff, while passing through 7,000 feet on an instrument departure, the crew heard a loud bang and the aircraft yawed to the left.

Noting a complete loss of engine torque, low compressor-idling speed, windmilling propeller, and flames from the exhaust stack, the pilots quickly executed an emergency-engine shutdown. They declared an emergency with air-traffic control and requested a return to NAS Corpus Christi. They flew a single-engine instrument approach to the field.

Postflight inspection revealed that the engine compressor casing had cracked in flight.

One Down and **Locked**

BY LT. KERRY BISTLINE

It was my first flight as a P-3C Orion patrol plane commander (PPC), and I thought things couldn't be going better. We had a beautiful, clear and sunny Wednesday in Jacksonville, Fla. I had just passed my final check ride for PPC the previous Friday. My roommate and I were the only pilots scheduled for a 0500 brief for a dedicated-field-work (DFW) event.

We planned to transit down to Homestead Air Reserve Base (KHST) to complete three approaches and six landings each to meet our monthly proficiency minimums. We'd then fly up the gulf coast of Florida to Gainesville for more touch-and-goes, followed by a full stop at NAS Jacksonville.

Everything went smoothly on my first PPC preflight. After mechs changed the nose tires, an air-cart huffer start was required because of an auxiliary-power-unit (APU) bleed-air gripe. We've all done huffer starts several times before, so this was not a big issue. Engine starts were smooth, and we took off before our 0700 scheduled departure time. My days as PPC had started on the right foot, and I hoped for a routine first day as a qualified aircraft commander.

The transit to Homestead ARB was uneventful. We requested multiple ILS approaches when we checked in with Miami approach. Six ILS approaches and touch-and-goes were completed before entering the VFR tower pattern. After completing our tenth touch-and-go, I called for gear-up, and my copilot raised the landing-gear handle. After gear retraction, we received a barber-pole indication for our port main-landing gear (MLG), with the nose gear and starboard MLG indicating up-and-locked.

I continued climbing to pattern altitude. I began the NATOPS procedure for an unsafe landing-gear-up indication with my flight engineer, while my copilot requested multiple laps at pattern altitude. About 15 to 20 seconds into the procedure, the No. 1 and No. 1A hydraulic pump low-pressure lights came on, and we noted a complete

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ABOUT 15 TO 20 SECONDS INTO THE PROCEDURE, THE NO. 1 AND NO. 1A HYDRAULIC PUMP LOW-PRESSURE LIGHTS CAME ON, AND WE NOTED A COMPLETE LOSS OF NO. 1 HYDRAULIC-SYSTEM PRESSURE AND QUANTITY.

Photo by SSgt. Tony Tolley. Modified.

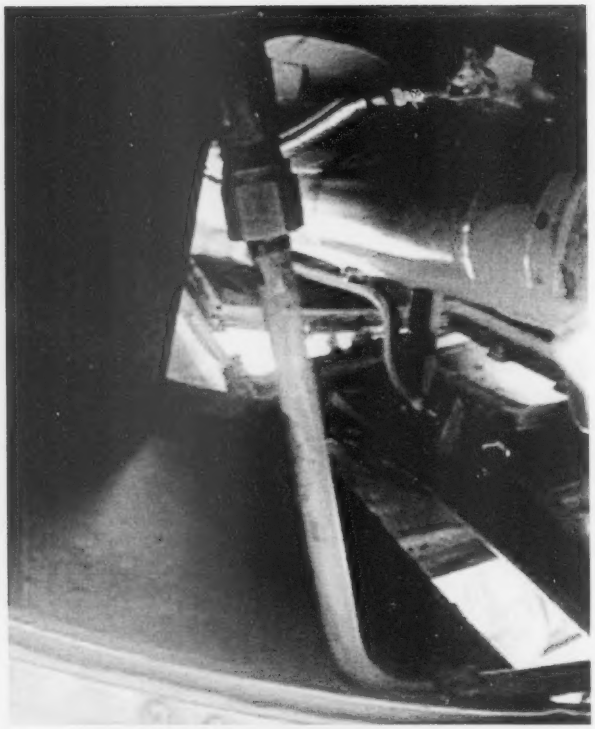
loss of No. 1 hydraulic-system pressure and quantity. We immediately secured the pumps per NATOPS and completed the unsafe gear-up procedure.

The P-3C has two hydraulic systems which assist with flight-control movement and operate the flaps. Also, the No. 1 hydraulic system provides pressure used to operate the landing gear, nosewheel steering and normal braking. Realizing we had lost the No. 1 hydraulic system, we declared an emergency and would have to perform the NATOPS landing-gear extension without hydraulic pressure procedure. Once we achieved a down-and-locked indication for all three landing gear and visual confirmation from tower, we completed the checklists and briefs. We discussed landing with normal brakes limited to the accumulator charge and no nosewheel steering.

I decided to land at Homestead because I felt it was safer than making a more than 300-mile transit with one operable hydraulic system. If we had lost the No. 2 hydraulic system on the transit back to Jacksonville, we would have had to make a no-flap, boost-out emergency landing. This type of landing requires faster approach speeds (longer ground roll distance), and a significant amount of control-input force because of the lack of boosted hydraulic pressure to aid in flight-control movement.

I made the call to stay at Homestead, which had an ideal runway for our situation (11,000 by 300 feet) and minimal air traffic.

I use a helpful mnemonic that aids in adherence to OPNAV 3710 guidance for multi-engine aircraft when determining the safest course of action for an emergency: FAM weather FAM. Fuel state (F) was not a concern. We already were light enough to land, and had enough fuel to divert anywhere in Florida. Air-traffic congestion (A) was very minimal at Homestead. The nature of the malfunction (M) was a complete loss of the No. 1 hydraulic system, and we didn't know where the hydraulic leak was. A one-and-a-half-hour transit with the possibility of losing the remaining hydraulic system was definitely undesirable. The weather at KHST was CAVU, and the weather in the Jacksonville area was forecast to be marginal VMC. The second "FAM" is familiarity of the airfield. My copilot and I had bounced at Homestead several times—we were comfortable in the pattern and at the field.



Before the full-stop landing, we requested a tow vehicle and were told by tower that transient alert had a universal tow bar for military aircraft. Without nosewheel steering, I had to use rudder and then asymmetric thrust from the engines below 50 knots to maintain centerline. We regularly practice this during pilot-upgrading flights in the training syllabus. We also practice taxiing without nosewheel steering, but since we had a tow vehicle and a dwindling brake-accumulator charge, we decided to stop and shut down on the runway. Once the aircraft was stopped on the runway, I set the parking brake, shut down the engines and requested the tow vehicle.

When ground-support personnel tried to tow the aircraft, we found the universal tow bar was not so universal after all. I had to taxi the aircraft clear of the runway using asymmetric engine thrust to turn and maintain centerline. Next, we had to determine if Homestead transient alert had a compatible air cart for a P-3C.

AFTER 1.5 HOURS ON THE RUNWAY waiting for the tow bar and a functional air cart, we finally were able to start engines. I contacted home plate to discuss my ORM plan for taxiing the aircraft with no nosewheel steering and normal brakes limited to the remaining brake-accumulator charge. After discussing all options and scenarios, we got the OK to taxi clear of the runway with ground personnel standing by.

I taxied the aircraft using engine thrust to steer. About eight normal brake applications remained. Our emergency-brake bottle would also provide another three full brake applications. The taxi evolution went well. I only needed one full brake application to stop the aircraft and set the parking brake at the transient line.

After the aircraft was shut down, we continued to troubleshoot the No. 1 hydraulic system and found a one-inch crack in the gear-up portion of the hydraulic lines for the port main-landing gear (MLG). An Adel clamp had rubbed through its rubber grommet over time, and had worn through the hydraulic hard line weakening the metal. It was only a matter of time until the line failed—today was the day. Parts and maintenance personnel were flown in to correct the issue the same day. VP-45 airframers did an outstanding job getting the aircraft back in an up status, efficiently and safely. Once maintenance was complete, we started engines with the help of KHST base operations and returned to Navy Jax.

The emergency on my first flight as a qualified P-3C Orion PPC reaffirmed the importance of always expecting the unexpected. What seemed like an easy, day flight with my roommate turned into the hardest day I have had yet. The extensive training I had completed throughout my upgrading process served me well in this case, but I also saw that I cannot let complacency set in and must always stay in the books.

LT. BISTLINE FLIES WITH VP-45.

Not Another Groundhog Day

BY LT. COLIN CHANCE

I had been deployed to the 2515th Naval Air Ambulance Detachment (NAAD) for nine months, and every day was Groundhog Day. Get up early, spin and set the bird, preflight again after lunch and wait for the call that never came. Troop numbers in Iraq were winding down, and so were the medevacs in Southern Iraq and Kuwait.

Photo composite image.

I'd done my time at Contingency Operating Base (COB) Basrah in Southern Iraq and was spooling down for the final month at Camp Buehring in Kuwait. A fresh detachment of personnel had arrived, and we were training them so we could go home.

The rest of the crew for my final first-up day was all new to the theater. They had had a day-night orientation flight to get the lay of the land, and were champing at the bit for an actual medevac.

Our aircraft, side-number 06, was a problem child. On the previous flight, the No. 1 engine had rolled back to idle, and the crew made a single-engine landing in challenging conditions. However, troubleshooters couldn't duplicate the discrepancy. Also, the EGI (embedded GPS inertial navigation system) control panel was bad, so we couldn't turn on the No. 2 EGI. The bird was down night/IMC and had potential engine problems; I filed away the issues in the back of my mind as I walked to spin up the bird.

The second-up copilot gave the standard medevac brief, after which I settled into what looked like another boring wait for the call that never comes. Except this time it it did—I hadn't been sitting at my desk for 15 minutes when "First up to the TOC, first up to the TOC," came over the radios. I hurried down the hall to our tactical operations center.

The battle-watch captain (BWC) had gotten a call about a wreck on the road out to K-Crossing (the larger of two US border checkpoints between Iraq and Kuwait). The caller said that one of the passengers had broken his leg. My corpsman and I decided that the most likely scenario was a 30-minute ambulance ride to Buehring to get the leg set, followed by an afternoon aerial-evacuation flight to the clinic at Camp Arifjan (AJ).

I was wrong, because we heard, "Medevac, medevac, medevac, first up, medevac, medevac, medevac. It turned out there were three patients; one had a fractured skull and was losing a lot of blood.

The weather wasn't bad: 105 degrees with four to five miles of visibility in dust and forecast to stay that way. We were out of the chocks in no time. While the BWC was getting grid coordinates for us, we bustered toward K-Crossing, while I scanned the road and soon saw the traffic jam.

My copilot said the bird didn't "feel right." I took the controls and had him run through the landing checks. The bird was a little squirrely, but I chalked it up to a combination of high winds and the AFCS degradations from not having a No. 2 EGI. With gusts of more than 30 knots, the gust-alleviation function, in particular, would have been a nice thing.

The landing zone was in the dirt about 100 feet north of the road. I saw an ambulance, an upside-down Humvee, and a huge gaggle of people. The landing was a "routine" brownout landing in moderate brownout conditions—the high winds helped our cause. Our three crew members went to get the patient. My copilot loaded the flight plan to AJ.

Ten minutes later, the crewman hauled a litter toward the aircraft. The corpsman hurried ahead and plugged himself into ICS to pass an update. "The patient is in bad shape, but he's stable," he said. "We need to hurry with this one."

I asked where he thought we should take the patient, and we settled on AJ. Although it was farthest, it had the best facilities. The only other possibility was the Al Jahra Hospital, a Kuwaiti civilian facility that was closer and had good facilities.

In the desert heat the aircraft is usually Ng limited, and I already was at the top of the yellow (30 minute) range at 101.9 percent. Then the master-caution light came on, along with a torque-split caution.

We climbed to our cruising altitude of 500 feet and checked in with Moholab Control, the Kuwaiti controller, who cleared us direct to Alpha Sierra East and then on to AJ. Alpha Sierra (Ali Al Saleem Air Base) is the big Air Force base in Kuwait and is worth avoiding because the Kuwaitis conduct rotary-wing flight training there.

I was on the controls in a stiff 30-knot crosswind, which our AFCS issues made more challenging then normal. The ICS was jammed with comms about the patient. Alpha Sierra East is about the halfway point of the 40-minute flight. The hospital at Al Jahra is a

Photo by PH2 Nathanael T. Miller.

two-minute flight from that checkpoint. I asked if the patient needed to go there and got a definitive "No."

"Sir, how much longer until we get to AJ?" asked the corpsman.

"About 20 minutes," I replied. "I'm pulling all the power we've got available right now."

In the desert heat the aircraft is usually Ng limited, and I already was at the top of the yellow (30 minute) range at 101.9 percent. Then the master-caution light came on, along with a torque-split caution. The No. 1 engine was reading zero torque.

I did the emergency procedures automatically, taking a hard look at the engine instruments. My first thought was to relax—the rotors sounded like they were turning at 100 percent, and it was unlikely we'd actually lost the engine.

"Sir, the patient's crashing! We need to get to AJ right now!" exclaimed the corpsman.

The engine load-sharing circuitry no longer was working, resulting in fluctuations in Ng, TGT, and torque on the No. 2 engine. The No. 1 still was reading zero. The fluctuations were not affecting Nr, which was all I really cared about.

I COULDN'T IGNORE THE URGENCY in the corpsman's voice, but I wouldn't do the patient any good if I balled up the aircraft. Alpha Sierra, which has two long runways, was three minutes away, but the medical facilities there are marginal. Camp Buehring was farther away and also had marginal medical facilities.

The Al Jahra hospital also was about three minutes away, but I didn't like the idea of doing a potential single-engine CAL into a sketchy urban neighborhood with horrid enviromentals.

That left us with only one real option: AJ. While still 20 minutes away, it had a heliport and good medical facilities.

We declared an emergency. I remained at max blast but I had the copilot hawk the engine gauges. If it looked like our problem was getting worse, we'd slow into the single-engine envelope. The next 15 minutes were agonizing. The crew chief alerted AJ to have a trauma team standing by.

The helipad at the hospital would be tricky to get into, and flat out impossible to get into or out of if we ended up single engine. The heliport on the other side of the base had better aviation facilities, but it was a 10- to 15-minute drive from the hospital. I opted for the former.

No sooner were we chocked than the trauma team wheeled in the gurney and took the patient. Not wanting to clobber the hospital pad, we flew over to the heliport.

Our maintainers troubleshot for the rest of the day and determined that our problem was a bad torque sensor. The fluctuations had been caused by the engine-control circuitry trying to match TGTs between the strong and weak engine. AJ has an Army depot-level maintenance facility and the part was available, but by the time the part was installed, it was getting dark. Since the bird was down night/IMC, we were stuck for the night.

At the main chow hall, an Army chaplain pulled me aside and asked, "Are you the crew that medevac'd my soldier from a car wreck?"

I said, "Yes," and his response made all the day's trials seem worth it, "You guys made the difference for him. He's going to make it."

All in all, definitely not another Groundhog Day.

LT. CHANCE FLIES WITH NAVAL AIR AMBULANCE DETACHMENT (NAAD) IN BASRAH, IRAQ, HSC-25.

Abort X 2 [illegible] Brakes

BY 1STLT. CHRISTOPHER BROMLEY, USMC

It was my first air-combat-maneuver (ACM) solo as Dash 2 of a two-plane event in advanced flight training with VT-7. I had completed my check ride the previous day with the same instructor pilot (IP) who was to lead me out to the working area on my solo. The preflight brief was standard with an emphasis on ACM mechanics. An interval takeoff also was briefed, which meant the IP in the lead T-45C would initiate his takeoff roll, and I would follow exactly seven seconds later. ORM and emergencies were covered in-depth.

We taxied as a section to the duty runway. Once cleared for takeoff, we positioned ourselves at the approach end and lead signaled for an engine run-up. I advanced the throttle to military rated thrust (MRT) and wiped-out the controls. I had a good engine, hydraulics, and generator, so I signaled lead with a thumbs-up and received the kiss-off.

As lead raced down the runway, I began a slow, mental count to seven, then released the brakes and started to roll. All cockpit indications were normal as the airspeed came off the peg at 50 knots. I saw lead rotate ahead of me, and I again scanned my instruments; everything looked good.

When airspeed reached rotation speed of 120 knots, I heard the master-caution tone and immediately saw a flashing master-caution light. My hydraulic (hyd) and ram-air-turbine (RAT) caution lights also came on. Because the RAT is attached to the hyd 2 system, I immediately knew this was a problem. Although the hyd 2 system is only a backup for the hyd 1 system and not an immediate danger to safety of flight, I decided to abort.

Here was my reasoning: According to the takeoff performance calculations, I knew I was about 2,500 feet down an 8,000-foot runway and had about 5,500 feet still ahead. Although I do not recall exactly how much runway was remaining (I didn't look outside for the runway-distance boards), I did notice a lot of pavement in front of me. I felt comfortable aborting at this point and definitely preferred staying on the deck versus getting airborne with an obvious hydraulic problem. I expected to return to the line, get another aircraft, and meet lead out in the area to finish the hop.

I aborted in accordance with NATOPS. In doing so, memories of stories about pilots applying brakes too hard and blowing tires were fresh in my mind. I did not want to make a bad situation worse, so I used relatively light braking to slow the aircraft. Once the immediate-action items were completed and the aircraft was slow and under control, I notified tower. I then called lead on TAC frequency and told him I had aborted. Lead asked why and I, wanting to be brief on the radios, told him about the hyd and RAT caution lights. I made no mention of the abort speed.

After turning around on the runway to taxi back,

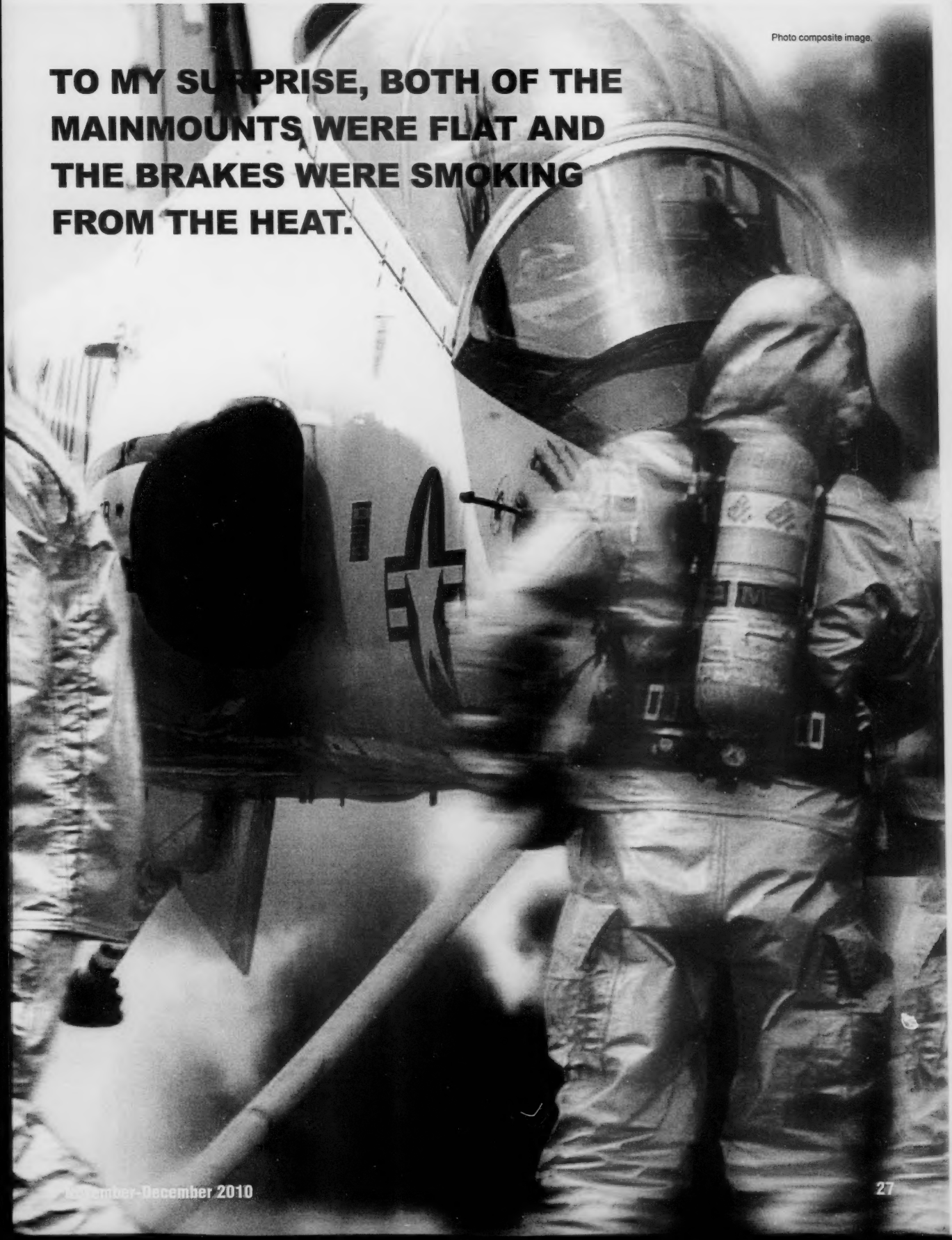


Photo composite image.

TO MY SURPRISE, BOTH OF THE MAINMOUNTS WERE FLAT AND THE BRAKES WERE SMOKING FROM THE HEAT.

lead had me switch up base frequency to inform the duty officer (ODO) of the situation. As I taxied off the active runway, lead asked what my hydraulic gauges were reading. I told him hyd 2 read about 1,500 psi as opposed to its normal 3,000 psi. When lead heard this, he asked if I had tried to reset the system. I told him no. He then had me try a reset. Resetting the system in the T-45C entails pressing a single button. The reset brought hyd 2 pressure back up to 3,000 psi and extinguished the hyd and RAT caution lights. I told lead everything was back to normal, and he directed me to go back to marshal, get a clearance, and meet him in the working area.

ALTHOUGH I DID NOT FEEL like my aborted takeoff was a huge emergency, I also did not feel comfortable taking this plane flying again. Lead and the ODO did not share this same feeling because they were under the impression I had aborted below 50 knots, and I had not told them otherwise. I asked lead if I should stop by a troubleshooter and see if they would look at the hyd system. He said there would be nothing they could do because I had reset the system, and it appeared to be working fine.

I taxied and picked up a clearance, completely skipping the final maintenance checkers. As I headed to the active runway, lead switched me to our original TAC frequency. He instructed me to give the controls an extra thorough wipeout. This action would cause the RAT to deploy again if there was a remaining hyd issue; obviously a deployed RAT was better during engine run-up than on takeoff roll. I did exactly as instructed and touched all four corners with the stick at least five times, while keeping my eyes on the hyd 2 gauge. I also mentally prepared myself to abort if the lights came back on.

Cleared for takeoff and with good cockpit indications, I released the brakes and started my second takeoff attempt. Everything looked normal again until about 118 knots and, you guessed it, the hyd and RAT caution lights illuminated. I executed another abort, taking extra caution to not jump on the brakes too hard because I still had plenty of runway remaining. Braking action initially felt exactly the same as the first abort, but I soon realized I was not slowing at the rate I had before. I was decelerating through about 60 knots when I realized I wouldn't stop before the end of the runway. I lowered the hook and engaged the long-field-arresting gear at slightly below 50 knots.

I called tower and requested assistance. I then told lead on TAC of the second abort, but I never mentioned taking the long-field arrestment. When the crash crew arrived, they immediately started spraying down the main-landing gear. After securing the engine and stepping out of the aircraft, I took a look at the gear. To my surprise, both of the mainmounts were flat and the brakes were smoking from the heat. The crash crew said the brakes had been on fire when they arrived, hence the use of the fire hoses. I did not realize the severity of the situation until that point. I never felt the tires deflate, and I didn't see the flames coming from the brakes.

I learned a lot that day about things that, as an aviator, I should have (and was expected to have) known. We are trained and undergo annual reminders of the importance of good ORM and CRM. I had allowed these important, potentially lifesaving principles to slip by in my haste to remedy the situation and complete the mission. As I am sitting here writing this, the lack of proper risk assessment, situational awareness, assertiveness, as well as poor decision-making and communication are practically screaming at me.

The pilot in command, even if he is a solo student aviator, is ultimately responsible for the operation of his aircraft. He alone has the best information relating to his situation, and therefore must not only be intimately familiar with NATOPS and established operational procedure, but exercise sound judgment before "inviting outside help" into the cockpit to assist. I should have slowed down, taken the time to make sure all checklist items were completed, and returned to the line for a maintenance inspection after my first high-speed abort. My lead and the ODO were there to assist me, but their advice would have been drastically different if I had told them everything that actually had happened.

At the end of the day, I am extremely fortunate to have the opportunity to Monday morning quarterback myself. This situation could have ended much worse than it did.

1STLT. BROMLEY, USMC, FLEW WITH VT-7.

Photo by MCS2 Kristopher Wilson.

It's Elementary

BY CAPT. ADAM FOUSHEE, USMC

As I drove to work on a Wednesday morning, I remember planning what I was going to do with the upcoming long weekend. I was certain that none of my plans would involve work. However, when I first checked into the squadron last July, one of the items the XO told me was to be prepared to deploy at a moment's notice.

Which is exactly what happened: a short-notice deployment to Haiti to conduct humanitarian assistance and disaster relief (HADR) for the deadliest natural disaster in the history of the western hemisphere. Within 48 hours my squadron had prepared and mobilized 265 Marines and 12 aircraft onto USS *Bataan* (LHD 5) and had begun the transit south. This experience would be especially nerve wracking because I had no boat experience, and it was the first time I was outside of the US flying real-world operations.

We knew very little of the mission and how our squadron was going to fit into the big picture. Most of the pilots hadn't expected such a dynamic and challenging airspace, which included a multitude of military and civilian rotary-wing aircraft. This situation, combined with the large number of ships operating in the Port-Au-Prince area, set the stage for a hectic AOR.

As the days passed, airspace deconfliction became more difficult because of the numerous aircraft conducting different missions from naval ships. These were administrative missions, not the tactical missions we expected for our first deployment. The environment was fluid—the high volume of dynamic retasking created a completely different type of friction.

Our first mission was to take security forces to Haiti. We loaded 84 Marines into the back of a division of H-53s and launched a section of Hueys to push forward and recon the landing zone. Just after takeoff, our lead aircraft's navigation equipment began to fail, which required the flight to use Dash 2 for orientation. We pushed the Hueys to fly over the zone to help build our situational awareness for the insert. We planned for the zone to be big enough for all three aircraft.

Upon arrival, and after the Huey passed a zippo (landing zone) brief, we realized it was a one-aircraft zone. We assessed the situation using time-critical ORM and decided to land one aircraft at a time. The other two planes remained in holding in the preplanned holding area.

How did we overcome our challenges? For every flight, we emphasize "brilliance in the basics." Mission success does not come from the individual who creates the most intricate plan, but the one who generates a clear and concise plan that is easy to understand and, after some risk analysis, from which you can deviate. Because of our ability to remain flexible during all subsequent missions, we continued to be successful with our operations. Simple things like how to effectively set up your radios, how to quickly troubleshoot equipment like the GPS, and how to orient yourself on a map, become more difficult in an ever-changing and fluid environment.

If you're preparing for a mission such as HADR, your preparation begins when you are training at home. The basic skills you are taught will keep you safe in an environment where hundreds of military and civilian aircraft are using the same airspace but are not on the same frequencies.

This operation gave credibility to the techniques that we as pilots employ on a day-to-day basis. Since the first days of flight school, you learn the basic techniques of CRM and ORM. These elementary principles ultimately will be the greatest contributing factors to successfully executing any mission.

CAPT. FOUSHEE FLIES WITH HMH-461 AND WAS EMBARKED ABOARD USS *BATAAN* (LHD 5).

The author provides good example of applying risk management in a real-world scenario. The best-laid plans cannot account for all possible changes to the mission, so time critical risk management is the key. Assess the situation—the LZ was not the expected size. Balance the resources—fuel, priority, and other aircraft. Communicate—deconflict airspace and land one aircraft at a time. Do and debrief—continue to execute the mission while monitoring for other changes. The lessons learned from the debrief became the starting point for subsequent briefs in the HADR AOR.—Ted Wirginis, ORM manager, Naval Safety Center.

Please send your questions, comments or recommendations to: Cdr. Duke Dietz, Code 16
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375 A St., Norfolk, VA 23511-4399
(757) 444-3520, ext. 7212 (DSN-564)
E-mail: duke.dietz@navy.mil

A New Spin On Deploying

Photo by Allan Amen.

BY LT. TIMOTHY LEONARDI

Our squadron found itself in a place it had not been in for more than four years: preparing for deployment. As part of CVW-17, the "CAG without a carrier," the Bluetails had become a det-centric squadron. We were very adept at setting up short-term presences at various military exercises from Key West to Vancouver, Canada, but the mere thought of becoming part of a deployable squadron seemed all but a distant memory. By the time VAW-121 chopped to CVW-7 and began the work-up cycle for the cruise in support of Operation Enduring Freedom (OEF), not a single member of the wardroom had been with the squadron on the last deployment. We soon learned how difficult it was to deal with all the details necessary to deploy.

To prepare for our OEF cruise, aircrew cracked the books, and for operations in the Middle East, this means opening up the theater special instructions, or SPINS. To augment this document, the squadron split up into various briefing teams that presented each

For a Hawkeye squadron, fairly removed from any connection with "tactical" suppliers, it was a challenge for our aircrew and supply department.

chapter to the wardroom to highlight the important sections, and establish squadron subject-matter experts (SMEs) on the pertinent sections.

One section of the SPINS that was closely read and meticulously briefed was the chapter on personnel recovery (PR). Without a recent operational deployment, the squadron's idea of survival was something more out of the television show *Survivor* than the combat-evasion techniques that are the heart of aircrew survival: evasion, resistance, and escape (SERE) training. Very quickly, things like the code of conduct, evasion plans of action (EPA), and the combat survivor evader locator (CSEL) radio became more important than simply bringing a cell phone on a flight and thinking we had comms covered.

Possibly the biggest shortcoming we faced as a squadron was the theater-required items list. Deficiencies in knowledge can always be combated with training. However, a lack of equipment presents an issue that hampers your ability to comply with theater mandates: a situation our squadron faced with only a short preparation for operational movement (POM) period and the translant to fix. In two short months, we had to come up with the gear required by the combined forces air component commander (CFACC) to fly in OEF. For a Hawkeye squadron, fairly removed from any connection with "tactical" suppliers, it was a challenge for our aircrew and supply department.

We soon became experts in IR reflective patches, pointee-talkies, and flashlight suppliers. Some conversations in the ready room seemed more fitting for an infantry platoon than an aviation squadron. Orders were placed for the items that were not on hand, with delivery to occur during the translant. Creativity and use of at-hand items completed our requirements. Trash bags served as water-storage devices. Chemical lights from float-coat caches were integrated for use as the SAR-friendly "buzzsaw" device.

As we pulled out of our first port call in Marseilles, France, every COD hit was viewed with great anticipation. The big ticket items that the squadron was expecting were Sidewinder flashlights, with LED infrared capability, and the required infrared reflective "glint" tape and patches. The CODs came and went, but the items never showed up. As the squadron neared theater, it became evident at least some of the required items would not arrive as we began flying combat missions.

As the squadron neared theater, it became evident at least some of the required items would not arrive as we began flying combat missions.

We discovered an error in our order process had prevented the expedient purchase and delivery of our IR patches. Our sister squadron, who was chopping out of theater, had "glint" squares for us to borrow until our items showed up.

A few weeks later, after more than 100 hours of green ink logged by our squadron, our infrared reflective patches arrived. Because of some quick work by the parachute riggers, the patches were integrated into aircrew gear in less than 24 hours. Were it not for the continual press of the junior officer corps to make sure the squadron had the necessary gear, and the timely help from a fellow Hawkeye squadron, we may have had to fly in combat with degraded survival gear.

Simple oversights happen every day, but this incident illustrates how everyone is involved in the safety chain in a modern combat-aviation squadron. While personnel in the supply department may feel removed from the day-to-day operations of a unit, their actions can be just as vital to mission execution as the pilot at the controls or mission commander on the radio.

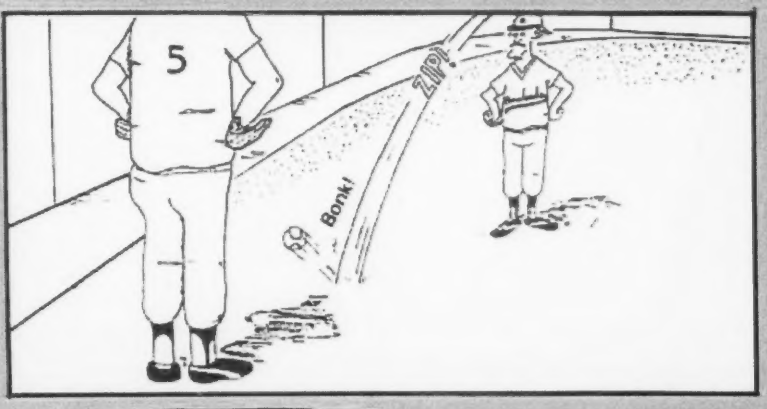
LT. LEONARDI FLIES WITH VAW-121.

Classic

BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

by Lt. Ward Carroll



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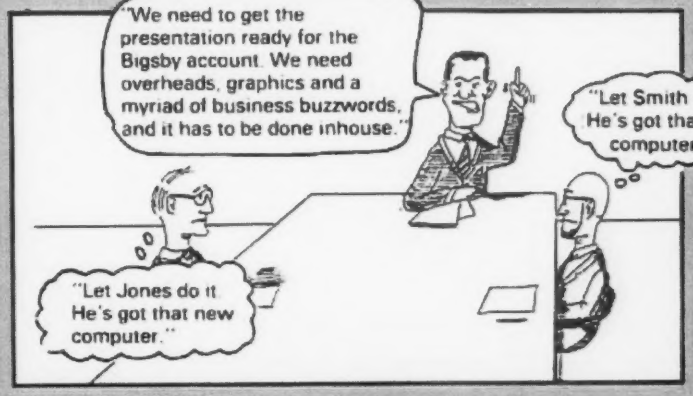
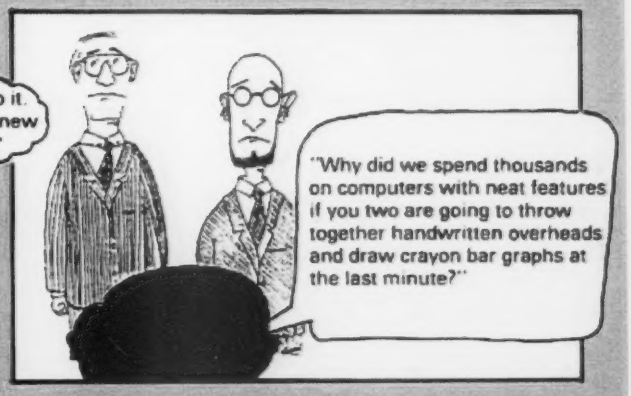
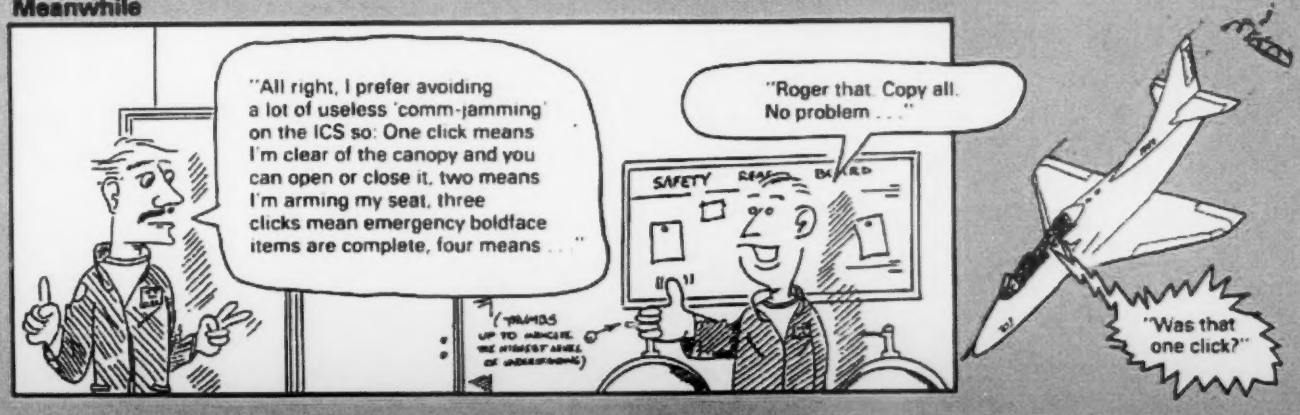
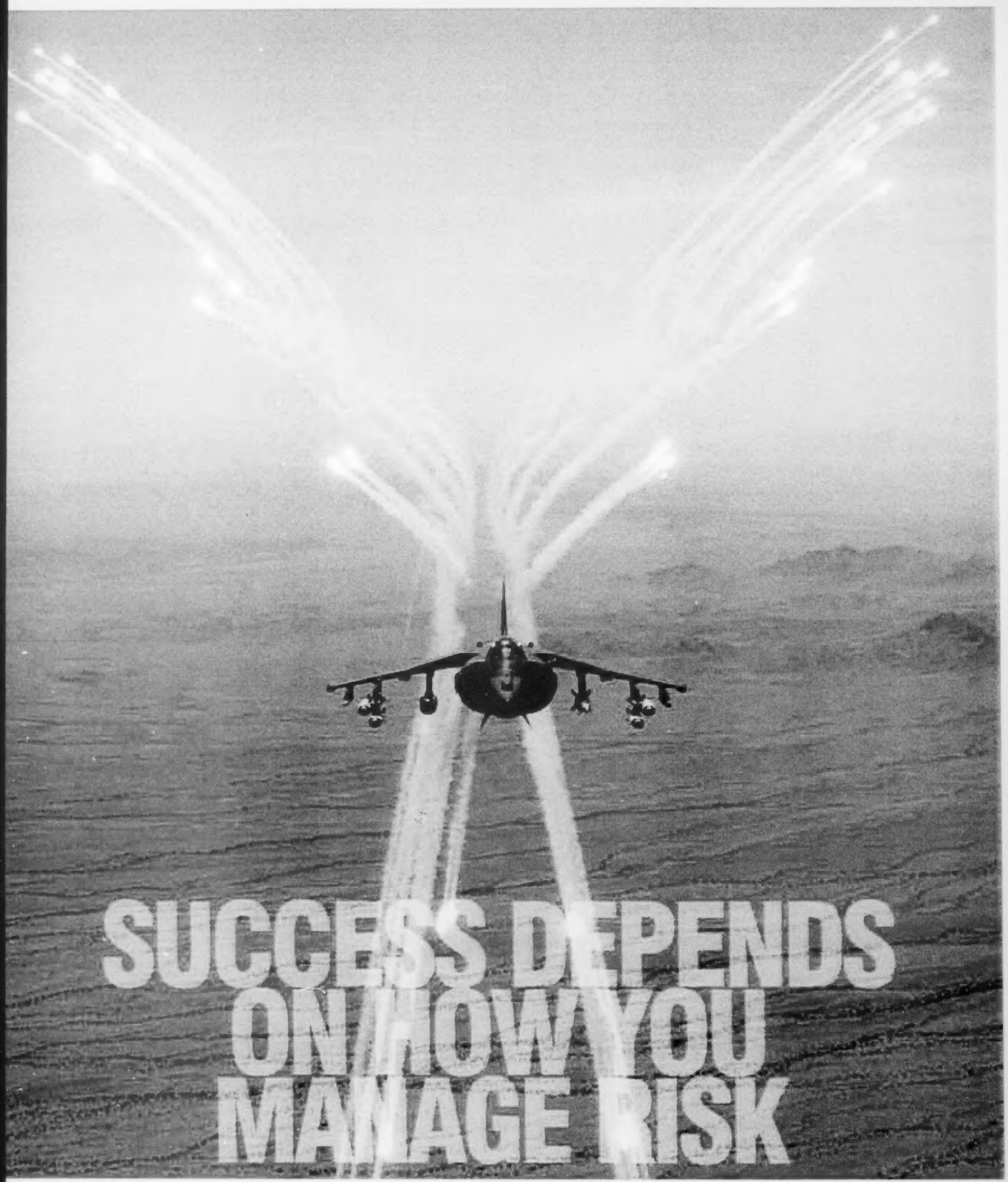

"We need to get the presentation ready for the Bigsby account. We need overheads, graphics and a myriad of business buzzwords, and it has to be done inhouse."
"Let Smith do it. He's got that new computer."
"Let Jones do it. He's got that new computer."


"Why did we spend thousands on computers with neat features if you two are going to throw together handwritten overheads and draw crayon bar graphs at the last minute?"

Meanwhile


"All right, I prefer avoiding a lot of useless 'comm-jamming' on the ICS so: One click means I'm clear of the canopy and you can open or close it, two means I'm arming my seat, three clicks mean emergency boldface items are complete, four means . . ."
"Roger that. Copy all. No problem . . ."
SAFETY
"Was that one click?"

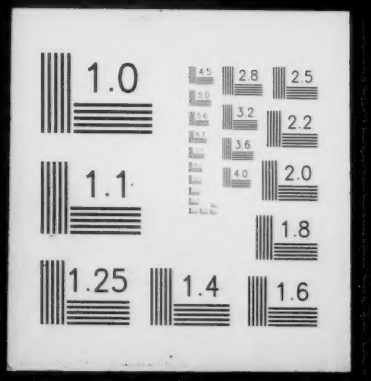
Miscommunication can be embarrassing in any profession. In aviation it can be more so.



TRM

Time Critical Risk Management

NAVAL SAFETY CENTER
EST. 1951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